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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/023,653

12/21/2001

Masato Takahashi

110975

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06/09/2004

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EXAMINER

KIM, PETER B

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 06/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/023,653

Applicant(s)

TAKAHASHI, MASATO

Examiner

Peter B. Kim

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 12-15 and 37-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 12-15 and 37-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 42004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Applicant's arguments filed on Apr. 28, 2004 have been fully considered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, 12-15, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakamoto (5,931,441).

Sakamoto discloses an exposure apparatus that exposes a pattern of a mask (228) held by a mask stage (227) onto a substrate (222) held by a substrate stage (220) by scanning the pattern of the mask onto the substrate with a substrate stage having a main stage body (220) driven over a base plate (206) and a force actuator (207) that applies a force to the base plate comprising a memory (213) that stores vibration characteristics of the base plate corresponding to different positions of the main stage body (col. 18, line 66 – col. 20, line 17) a vibration detector (232) that detects the vibration characteristics of the base plate when the main stage body is driven and a controller (211) that controls the force actuator based on the vibration characteristics detected by the vibration detector and stored in the memory (col. 18, line 66 – col. 20, line 17).

Sakamoto also discloses a scanning exposure apparatus with a stage apparatus and a vibration control method comprising a detector (323) that detects a position of a center of gravity and of a major inertia axis of the stage when vibration is applied to the base plate by the main stage body where the center of gravity and the inertia axis are detected for different position of

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the main stage body (col. 18, line 66 - col. 19, line 12, and col. 19, lines 54-67) and a controller (211) that controls the force applied to the base plate by force actuator (207) towards the detected position of the center of gravity based on the position of the center of gravity and the position of the major inertia axis (col. 19, lines 13-53, and col. 20, lines 1-17). Sakamoto also discloses updating the force to be applied to the base plate based on the vibration of the base plate (col. 20, lines 10-17), and offsetting a reaction force where the law of conservation of momentum is satisfied.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 38-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Ebinuma et al. (Ebinuma) (6,396,566).

Sakamoto discloses the claimed invention as discussed above; however, Sakamoto does not disclose transferring a reaction force to a reaction frame different from the base plate and a linear motor that drives the main stage body with a first member on the main stage body and a second member on a bearing. Ebinuma discloses transferring a reaction force to a reaction frame (31, 45) and linear motor with a first member on the main stage body and a second member on a bearing (col. 6, lines 24-56). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the reaction frame and the linear motor of Ebinuma to

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the invention of Sakamoto in order to suppress vibration produced by stage movement as taught by Ebinuma in col. 2, lines 34-37.

Response to Arguments


Applicant argues that the added recitation is not taught by Sakamoto; however, as shown above, Sakamoto teaches updating of the force to be applied.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter B. Kim whose telephone number is (571) 272-2120. The examiner can normally be reached on 8:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Peter B. Kim
Primary Examiner
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